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HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER

MARTIR, LILYBETT

ART UNIT PAPER NUMBER

2855

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/634,507

Applicant(s)

KARBASSI ET AL.

Examiner

Lilybett Martir

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 7, 9 and 11-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9 and 11-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 20-21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cook et al. (Pat. 5,412,994).

- With respect to claim 20, Cook teaches creating a pressure change within a housing having two portions 80 and 84 (Col. 7, lines 18-28) sensing the pressure change using a sensing element 10, sealing the sensing element within the housing as with element 90, and communicating an electrical signal from the sensing element to an exterior of the housing by means of elements 94, 98 and 99.
- With respect to claim 21, Cook et al. teaches the utilization of sealing members to prevent leakage between elements 80 and 84 (Col. 7, lines 18-28).

- With respect to claim 23, Cook teaches communicating an electrical signal from the sensing element 10 through an elastomer 98 to an exterior of the housing by means of element 94 (Col. 6, lines 59-63).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1- 2, 6-9,11-12,15-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frick (Pat. 4,466,290) in view of Cook et al. (Pat. 5,412,994).

- - With respect to claim 1, Frick teaches a housing as composed by the two portions shown in Figure 3 having an inlet and an outlet as are the elements pointed by 24 and 26, first and second channels in communication with the inlet and the outlet as in elements 36A and 38A, a sensing element as in element 66, a restriction as in element 88, and a seal engaging the sensing element so as to prevent flow of a fluid past the sensing element as in elements 50 and 52, where there is an electrically conductive path from the sensing element to a lead as in elements 74 as noted in Figure 4. But Frick fails to specifically disclose the sensing element in a first channel, and a seal engaging the sensing element preventing flow of a fluid past the sensing element, said seal having a conductive path from the sensing element to a lead that extends outside of a housing. Cook et al. teaches a pressure sensor

die 10 that comprises a sensing element disposed on a first conduit 60, where the sensor die10 and buffer element 12 that acts as a seal that does not allow fluid past the sensing itself by means of elements 90 and 50, and 10 has a conductive path as formed by elements 98 and 99 from the sensing element to a lead 94 that is partially arranged outside the housing as noted in Figure 7 (Col. 5, lines 34-41, Col. 6, lines 59-62 and Col. 7, lines 18-28). One of ordinary skill in the art would have readily recognized the advantages and desirability of rearranging a sensing element in close contact with the fluid whose pressure is being detected to make a device compact and hence capable of fitting in smaller spaces, and also, one of ordinary skill in the art would have readily recognized the advantages and desirability of not permitting the entrance and flow of fluid past of the pressure sensing structure since it is inherent and well known in the art that it is necessary to content the fluid over a surface to therefore be able to detect the forces imposed by said fluid over the area of said surface (Frick Col. 6, lines 37-43 and Cook et al. Col. 7, lines 18-28).

- With respect to claim 2, Frick fails to show a housing comprised by only two portions. Cook et al. teaches the utilization of a housing formed by two portions 80 and 84 as noted in Figure 7. One of ordinary skill in the art would have readily recognized the advantages and desirability of providing a housing that is comprised by just two portions to provide a leak tight arrangement and therefore a more accurate sensing structure.

- With respect to claim 6, Frick teaches a fluid that is inherently a liquid or a gas (See abstract). It is well known in the art that a fluid is either a gas or a liquid.
- With respect to claim 7, Frick teaches an inlet 24, the outlet 26, and the second channel 82 being arranged to permit a flow of the fluid through the housing between the inlet and the outlet and wherein the sensing element is arranged to sense a pressure change across the restriction 88 as noted in Figure 4.
- With respect to claim 9, Frick teaches The inlet 24, the outlet 26, and the second channel 82 being inherently arranged to permit a bi-directional flow of the fluid through the housing between the inlet and the outlet and wherein the sensing element is arranged to sense a pressure change across the restriction as in element 88 as noted in Figure 4 (note the shape of the channels).
- With respect to claim 11, Frick teaches a housing as composed by a plurality of portions shown in Figure 3 having an inlet and an outlet as in elements 24 and 26, first and second channels as in elements 36A and 38A, a sensing element as is 66, wherein the sensing element inherently has first and second sides; a restriction in the second channel as in element 88 wherein the restriction permits flow of a liquid through the inlet, the second channel and the outlet, and a seal as in elements 58, wherein the sensing element 66 is capable of sensing a pressure change across the restriction as in element 88. Frick fails to teach, a first side of the sensing element being in direct fluid

communication with the inlet, the second side being in fluid communication with the outlet, and the seal preventing the flow of liquid past the sensing element. Cook et al teaches the utilization of a pressure sensor die 10 that comprises a fluid conduit 60 that works as an input of flow as noted in the arrows shown in Figure 7, and pressure sensing components 51 disposed in force transmitting relation with a diaphragm 50. The sensor die also comprises sealing elements 90 that don't allow flow past the sensing element 10 (Col. 6, lines 47-50). One of ordinary skill in the art would have readily recognized the advantages and desirability of rearranging a sensing element in close contact with the fluid whose pressure is being detected to make a device compact and hence capable of fitting in smaller spaces, and also, one of ordinary skill in the art would have readily recognized the advantages and desirability of not permitting the entrance and flow of fluid past of the pressure sensing structure since it is inherent and well known in the art that it is necessary to contain the fluid over a surface to therefore be able to detect the forces imposed by said fluid over the area of said surface (Frick Col. 6, lines 37-43 and Cook et al. Col. 7, lines 18-28).

- With respect to claim 12, Frick fails to show a housing comprised by only two portions. Cook et al. teaches the utilization of a housing formed by two portions 80 and 84 as noted in Figure 7. One of ordinary skill in the art would have readily recognized the advantages and desirability of providing a

housing that is comprised by just two portions to provide a leak tight arrangement and therefore a more accurate sensing structure.

- With respect to claim 15, Frick teaches an inlet 24, the outlet 26, and the second channel 82 being arranged to permit a flow of the fluid through the housing between the inlet and the outlet.
- With respect to claims 16 and 19, Frick fails to disclose a sealing portion that comprises a conductive path from the sensing element to a lead. Cook et al. teaches a pressure sensor die 10 that comprises a sensing element disposed on a first conduit 60, where the sensor die 10 and buffer element 12 that acts as a seal that does not allow fluid past the sensing itself by means of elements 90 and 50, and 10 has a conductive path as formed by elements 98 and 99 from the sensing element to a lead 94 that is partially arranged outside the housing as noted in Figure 7 (Col. 5, lines 34-41, Col. 6, lines 59-62 and Col. 7, lines 18-28). One of ordinary skill in the art would have readily recognized the advantages and desirability of not permitting the entrance and flow of fluid past of the pressure sensing structure since it is inherent and well known in the art that it is necessary to contain the fluid over a surface to therefore be able to detect the forces imposed by said fluid over the area of said surface (Frick Col. 6, lines 37-43 and Cook et al. Col. 7, lines 18-28). One of ordinary skill in the art would also have readily recognized the advantages and desirability of providing a connecting portion closely secured

to the sensing element to make a device compact and hence capable of fitting in smaller spaces.

- With respect to claim 17, Frick teaches The inlet 24, the outlet 26, and the second channel 82 being inherently arranged to permit a bi-directional flow of the fluid through the housing between the inlet and the outlet and wherein the sensing element is arranged to sense a pressure change across the restriction as in element 88 as noted in Figure 4 (note the shape of the channels).

6. Claims 3-4, 13-14 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frick in view of Cook et al. as applied to claims 1-2 and 11-12 above, and further in view of Maurer (Pat. 5,184,107).

- With respect to claims 3,13 and 22, Frick teaches the utilization of seals 50 and 52 to prevent leakage as noted in Figure 4. Cook et al. teaches the utilization of sealing members to prevent leakage between elements 80 and 84 (Col. 7, lines 18-28). Frick fails to disclose the utilization of a seal comprised by a pair of elastomeric seals that capture a sensing element. Maurer teaches the utilization of a pair of elastomeric seals 30 and 32 that capture a sensing element 34. One of ordinary skill in the art would have readily recognized the advantages and desirability of preventing fluid leakages and prevent misreading, therefore making a sensing device more accurate and reliable.

- With respect to claims 4 and 14, Frick teaches the utilization of seals 50 and 52 to prevent leakage as noted in Figure 4. Frick fails to disclose the utilization of a seal comprised by a pair of elastomeric seals that capture a sensing element. Maurer teaches the utilization of a pair of elastomeric seals 30 and 32 that capture a sensing element 34. One of ordinary skill in the art would have readily recognized the advantages and desirability of preventing fluid leakages and prevent misreading, therefore making a sensing device more accurate and reliable.
- With respect to claim 24, Frick teaches the utilization of seals 50 and 52 to prevent leakage as noted in Figure 4. Cook et al. teaches the utilization of sealing members to prevent leakage between elements 80 and 84 (Col. 7, lines 18-28). Frick fails to disclose the utilization of a seal comprised by a pair of elastomeric seals. One of ordinary skill in the art would have readily recognized the advantages and desirability of preventing fluid leakages and prevent misreading, therefore making a sensing device more accurate and reliable.

Response to Arguments

7. Applicant's arguments with respect to claims 1-4, 6-7, 9, and 11-24 have been considered but are moot in view of the new ground(s) of rejection.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilybett Martir whose telephone number is (703)305-6900. The examiner can normally be reached on 9:00 AM to 5:30 PM.

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9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703)305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3432 for regular communications and (703)305-3432 for After Final communications.

10. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



Lilybett Martir
Examiner
Art Unit 2855



January 23, 2003



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800